

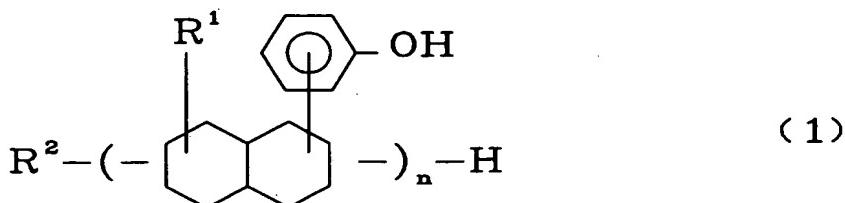
C L A I M S

[1] A thermosetting resin composition characterized as containing an epoxy resin having an epoxy equivalent weight of 5 100 - 2,000, an epoxy hardener in the form of a compound having a phenol group, and a layered silicate in the amount of 0.2 - 100 parts by weight, based on 100 parts by weight of resin constituents including said epoxy resin and epoxy hardener.

[2] The thermosetting resin composition as recited in claim 10 1, characterized in that said epoxy resin contains at least one type selected from the group consisting of a bisphenol epoxy resin, biphenyl epoxy resin, dicyclopentadiene epoxy resin and naphthalene epoxy resin.

[3] The thermosetting resin composition as recited in claim 15 1 or 2, characterized in that said epoxy hardener comprises at least one type selected from the group consisting of hydrophobic phenol compounds represented by the following formulas (1) - (3) :

[Chemical 1]

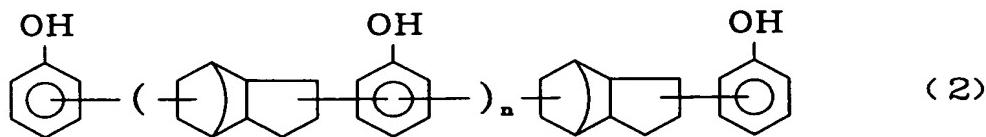


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(In the formula (1), R¹ denotes methyl or ethyl, R² denotes hydrogen or a hydrocarbon group and n indicates an integer of

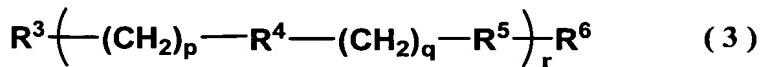
2 - 4)

[Chemical 2]



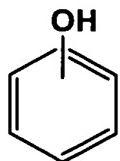
(In the formula (2), n indicates 0 or an integer of 1 - 5 and

[Chemical 3]

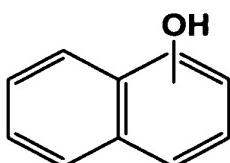


(In the formula (3), R^3 denotes a group represented by the following formula (4a) or (4b), R^4 denotes a group represented by the following formula (5a), (5b) or (5c), R^5 denotes a group represented by the following formula (6a) or (6b), R^6 denotes hydrogen or a molecular chain group containing 1 - 20 carbon atoms, p and q independently indicate an integer of 1 - 6, and r indicates an integer of 1 - 11).

[Chemical 4]

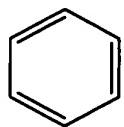


(4a)

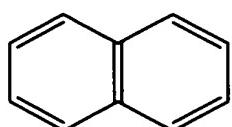


(4b)

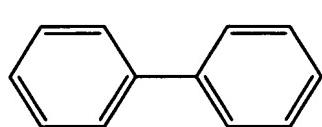
[Chemical 5]



(5a)

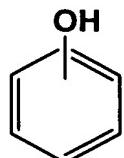


(5b)

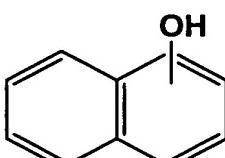


(5c)

[Chemical 6]



(6a)



(6b)

[4] The thermosetting resin composition as recited in any one
5 of claims 1 - 3, characterized in that said layered silicate
comprises at least one type selected from the group consisting
of montmorillonite, hectorite, swelling mica and vermiculite.

[5] The thermosetting resin composition as recited in any one
of claims 1 - 4, characterized in that said layered silicate
10 contains at least one type of ammonium salt selected from the
group consisting of alkyl ammonium salt containing 6 or more
carbon atoms, aromatic quaternary ammonium salt and heterocyclic
quaternary ammonium salt.

[6] A resin sheet characterized as comprising the
thermosetting resin composition as recited in any one of claims
15 1 - 5.

[7] A resin sheet characterized in that it is obtained by curing
the resin sheet as recited in claim 6.

[8] The resin sheet as recited in claim 6 or 7, characterized
20 in that a part or all of said layered silicate is dispersed in

the form of a stack consisting of 5 or less layers and has a mean interlayer spacing of at least 3 nm along the (001) plane when measured by a wide-angle X-ray diffraction method.

[9] The resin sheet as recited in any one of claims 6 - 8,
5 characterized in that it exhibits a mean linear expansion coefficient (α 1) of not exceeding $4.0 \times 10^{-5} / ^\circ\text{C}$ over a temperature range that is 10 - 50 $^\circ\text{C}$ lower than a glass transition temperature of a cured product of said thermosetting resin composition.

[10] The resin sheet as recited in any one of claims 6 - 9,
10 characterized in that it exhibits a mean linear expansion coefficient (α 2) of not exceeding $4.0 \times 10^{-5} / ^\circ\text{C}$ over a temperature range that is 10 - 50 $^\circ\text{C}$ higher than a glass transition temperature of a cured product of said thermosetting resin composition.

[11] The resin sheet as recited in any one of claims 6 - 10,
15 characterized in that a cured product of said thermosetting resin composition exhibits a dielectric constant at 1 GHz of not exceeding 3.3 and a dielectric loss tangent at 1 GHz of not exceeding 0.015.

[12] A resin sheet for insulating substrate, characterized as
20 comprising the resin sheet as recited in any one of claims 6 - 11.